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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

ORIGINAL

In the Matter of

Guidelines for Evaluating the
Environmental Effects of
Radiofrequency Radiation

ET Docket No. 93-62

COMMENTS OF NORTHERN TELECOM

Northern Telecom Inc. ("Northern Telecom") hereby comments on the proposal to amend and update the guidelines and methods used for evaluating the environmental effects of radio frequency (RF) radiation from FCC regulated facilities and devices.^{1/} Northern Telecom manufactures numerous transmitting devices used by both carriers and subscribers, and thus is very interested in this proceeding. Northern Telecom supports the Commission's Proposed Rule Making to update the standards for RF exposure, and commends the Commission for its continued effort to ensure the safety of all RF emitting devices. Northern Telecom is devoted to ensuring the safety of its products and believes that reasonable power limitations are prudent to protect the human health of users and the health of others that may be subjected to radio energy emitting from radio devices.

1/ Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation, ET Docket No. 93-63, FCC 93-142, released April 8, 1993 ("Notice").

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Northern Telecom firmly believes that radio systems will play an increasingly vital role in protecting and enhancing the health, safety, and welfare of the general population, including new medical applications and enhanced 911 access. Radio systems will play an increasingly important role in the economy and the telecommunications infrastructure, where it will become a vital link in the information superhighway. Northern Telecom provides the following brief comments and recommendations, and requests full consideration prior to FCC rule making and adoption of the new standards.

Definition of "Controlled" and "Uncontrolled" Environment

Northern Telecom conceptually agrees that an additional safety margin should be applied to transmitters and facilities that expose individuals who have no knowledge or control of their exposure. For example, emission levels from a cellular base station, when measured in areas accessible to the general public, must meet the uncontrolled limits. We recommend, however, that emission levels from the same cellular base station, when measured in areas accessible only to informed workers, need only meet the controlled limits. The "Controlled" and "Uncontrolled" definitions should follow the ANSI/IEEE suggestion, based on awareness, and not be differentiated solely on the status of employment.

Northern Telecom believes that many base stations or fixed transmitter systems will be installed or serviced by

contractors. Therefore, the definition of "Controlled" environments should extend beyond potential exposure to employees, and include installation or service by non-employees who are qualified technicians, since Northern Telecom assumes that those contractors are aware of the potential for exposure as a concomitant of their job.

Low-power Devices/Exclusions

Northern Telecom believes that the intent of the power requirement guidelines for low-power exclusions is to calculate power transmission levels on a time-weighted average. The Commission needs to clarify that average, rather than peak power, is the proper calculation. The low-power exclusion formula would apply an additional limitation that could restrict development of many new systems if the formula is interpreted to set a peak power limitation. For example, certain PCS technologies transmit for a short time and then turn off during the remainder of the frame period. Without clarification, highly efficient equipment using time-slicing technology may have to undergo specific absorption rate ("SAR") testing because of peak power utilized, even though its mean power level meets low-power criteria. Northern Telecom urges the Commission to clarify that time averaging, rather than peak power, is the appropriate calculation.

Northern Telecom is also concerned because the low-power exclusion rule in the Notice only applies to frequencies up

to 1500 MHz. Northern Telecom believes that an appropriate "low-power" exclusion formula or formulas should be extended to include frequencies between 1.8-2.2 GHz, and that this method for determining low-power exclusions be allowed in lieu of SAR testing for type approval.

A low-power exclusion rule for PCS devices is critical to permit manufacturers to develop devices that will correspond with the Commission's licensing and deployment timetable for PCS. The deployment of emerging technologies, including PCS, is in the 1800 MHz to 2200 MHz band. PCS is an important growth area which was not fully anticipated when the ANSI/IEEE guidelines were developed, and should be included in the low-power exclusions to ensure prompt and efficient deployment of PCS for the general public.

Northern Telecom agrees that a low-power device should be able to comply by using a low-power exclusion formula or by the ANSI/IEEE guidelines for specific absorption rate. Northern Telecom also agrees that additional caution is appropriate when the "radiating structure" is within 2.5 cm. of the body. However, further clarification is needed on how the 2.5 cm. rule should be applied. Northern Telecom encourages the Commission to consider a very low-power exception for the 2.5 cm. rule. An exclusion based on radiated power alone should be considered, if the SAR for some very low-power devices would consistently comply with the ANSI/IEEE guidelines, at a distance of less than 2.5 cm. Northern Telecom believes that new technologies will develop wearable radio devices, some of which will serve specific health,

safety and general welfare needs. The proposed 2.5 cm. rule could inhibit new product development of this type.

Northern Telecom agrees that proof of compliance should be submitted as part of the equipment authorization process. However, it should be acceptable to show compliance with SAR guidelines by reference to measurements from testing of devices with similar radiating structures. This would avoid duplication of detailed testing and research that has already shown compliance with the guidelines.

SAR Testing Facilities

In the event that SAR testing is necessary, Northern Telecom recommends that the Commission consider two important points prior to instituting related requirements:

- (1) The current lack of procedures for recognizing, certifying, or otherwise acknowledging the competence of laboratories capable of satisfying ANSI/IEEE test criteria. Standardization in this area is necessary to establish a high level of public confidence and to ensure uniformity within the product testing arena; and
- (2) The current limited availability of qualified testing facilities will hamper product/technology development and deployment until new testing capabilities catch-up to industry needs.^{2/}

^{2/} Northern Telecom understands that at present there are only two facilities in the U.S. capable of making the measurements
(continued...)

The potential adverse impact of these factors must be seriously considered by the Commission in its development of the rules. Northern Telecom believes that extension of the low-power formula or formulas to the 1.8-2.2 GHz band provides an appropriate near term solution.

Existing Categorical Exclusions

Generally, Northern Telecom favors replacing the current categorical exclusions with new guidelines. However, it may be prudent to phase in the new guidelines, where prompt compliance would be an exceptional hardship. Further, there may be some public safety systems that warrant retaining, or retaining in part, the current categorical exclusions. Northern Telecom will evaluate the Comments submitted in this proceeding by existing equipment owners and operators before supporting the specific suggestions for the current categorical exclusions.

Effective Date and Other Issues

Northern Telecom believes that the Commission Rules should, whenever possible, permit proof of compliance by calculating exclusions based on radiated power. Northern Telecom

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(one owned by a manufacturer, and one at the University of Utah). The absence of sufficient SAR measurement facilities could slow the deployment of PCS or other devices in the near term until additional SAR measurement facilities are constructed, particularly if all radiating devices potentially used within 2.5 cm must be tested.

believes that the formula for low-power exclusions could be expanded, without compromising the goal of the ANSI/IEEE guidelines. At this time, Northern Telecom believes that proof of compliance for new equipment is appropriate as part of the equipment approval process. Where new "health" guidelines are applied to existing equipment, proof of compliance could be filed with the Commission as an addendum to the prior equipment approval process. It is important that the Commission obtain the necessary information for assurance of compliance with environmental RF guidelines. Northern Telecom believes that manufacturers of new products should be allowed to file statements or certifications of compliance with the new guidelines, with tests being made available for review at any time. This would eliminate excess filings and paperwork burdens, and reduce the resources required at the Commission for approvals.

Conclusion

Northern Telecom supports the Commission's proposal to amend and update the guidelines and methods used for evaluating the environmental effects of RF radiation for the 1982 ANSI standard to the 1992 ANSI/IEEE standard. This is a positive step forward in ensuring the safety of equipment that emits RF radiation. However, Northern Telecom urges the Commission to clarify issues related to the low-power exclusion rules as set forth above to ensure that manufacturers will have a complete

understanding of the guidelines, and to ensure that the guidelines do not needlessly slow the deployment of new equipment or services. Northern Telecom supports reasonable low-power formulas for equipment type approval that are sufficiently conservative to protect health, and which avoid needless testing and additional paperwork for the Commission.

Respectfully Submitted,



Stephen L. Goodman
Halprin, Temple & Goodman
1301 K Street, N.W.
Suite 1020, East Tower
Washington, D.C. 20005
(202) 371-9100

Counsel for Northern Telecom Inc.

Of Counsel:

John G. Lamb, Jr.
Northern Telecom Inc.
2100 Lakeside Boulevard
Richardson, Texas 75081-1599

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